WHAT IS CLAIMED:

1. A method, comprising:

fusing a nuclear donor cell with an enucleated recipient cell to form a nuclear transfer embryo; and

introducing an artificial chromosome into the nuclear transfer embryo, whereby the resulting nuclear transfer embryo comprises the artificial chromosome, wherein:

introduction into the nucleoar transfer embryo is effected by introducing the artificial chromosome into a donor cell or enucleated recipient prior to fusing a nuclear donor cell with an enucleated recipient cell, or is introduced into the embryo after fusing a nuclear donor cell with an enucleated recipient cell.

2. The method of claim 1, wherein the artificial chromosome is a minichromosome or a satellite artificial chromosome.

3. The method of claim 1, further comprising:

activating the nuclear transfer embryo; and

transferring the nuclear transfer embryo into a maternal host animal.

4. The method of claim 3, further comprising:

permitting the transferred nuclear transfer embryo to develop into an animal in the host.

5. The method of claim 4, wherein the artificial chromosome comprises heterologous DNA that encodes a gene product.

6. The method of claim 3, wherein the host is selected from among a cow, goat, mouse, ox, camel, pig and sheep.

7. The method of claim 5, wherein the resulting animal expresses the gene product in its milk.

8. The method of claim 1, wherein the artificial chromosome is introduced into the nuclear donor cell prior to fusion of the nuclear donor cell with the enucleated recipient cell.

9. The method of claim 1, wherein the artificial chromosome is introduced into the enucleated recipient cell prior to fusion of the nuclear donor cell with the enucleated recipient cell.

10. The method of claim 1, wherein the artificial chromosome is introduced into the nuclear transfer embryo after fusion of the nuclear donor cell with the enucleated recipient cell.

11. The method of claim 1, wherein the artificial chromosome is a satellite artificial chromosome.

12. The method of claim 2, wherein the artificial chromosome is a satellite artificial chromosome.

13. The method of claim 3, wherein the artificial chromosome is a satellite artificial chromosome.

14. The method of claim 4, wherein the artificial chromosome is a satellite artificial chromosome.

15. The method of claim 5, wherein the artificial chromosome is a satellite artificial chromosome.

16. The method of claim 8, wherein the artificial chromosome is introduced into the nuclear donor cell by a method selected from among direct uptake, microinjection, cell fusion, microcell fusion, electroporation, electrofusion, projectile bombardment, calcium phosphate precipitation and lipid-mediated transfer.

17. The method of claim 9, wherein the artificial chromosome is introduced into the nuclear donor cell by a method selected from among direct uptake, microinjection, cell fusion, microcell fusion, electroporation, electrofusion, projectile bombardment, calcium phosphate precipitation and lipid-mediated transfer.

18. The method of claim 10, wherein the artificial chromosome is introduced into the embryo by a method selected from among direct uptake, microinjection, cell fusion, microcell fusion, electroporation, electrofusion, projectile bombardment, calcium phosphate precipitation and lipid-mediated transfer.

19. The method of claim 11, wherein the satellite artificial chromosome is isolated prior to introducing it.

20. The method of claim 2, wherein the artificial chromosome is a minichromosome.

21. The method of claim 4, wherein the host is selected from among a cow, goat, mouse, ox, camel, pig and sheep.

22. The method of claim 6, wherein the resulting animal expresses the gene product in its milk.

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DEPOSIT ACCOUNT